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10/550,219	05/19/2006	Frank Jordens	2003P00282WOUS	1393

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BSH HOME APPLIANCES CORPORATION
INTELLECTUAL PROPERTY DEPARTMENT
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EXAMINER

COLLINS, ALVIN

ART UNIT	PAPER NUMBER
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1796

NOTIFICATION DATE	DELIVERY MODE
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10/07/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/550,219	Applicant(s) JORDENS ET AL.	
	Examiner Alvin C. Collins III	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-40 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 21-40 is/are rejected.
- 7) ☒ Claim(s) 32 and 35 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. Claims 32 and 35 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 32 recites "The method according to claim 31, wherein said thickener, or said thixotroping agent, respectively, is added after said hydrolysis and condensation of step (a)." This fails to further limit claim 30, which requires the hydrolysis and condensation to take place in the presence of a thickener or thixotroping agent. Claim 35 recites "The method of according to claim 34 wherein said finely dispersed filler is added after said hydrolysis and condensation of step (a)." This fails to further limit claim 34, which requires the hydrolysis and condensation to take place in the presence of a finely dispersed filler.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear which silane is intended to be the "first silane."

Clarification is requested.

Art Unit: 1796

3. Claims 23, 26, 32, and 35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding the content of water and alcohols with a boiling point of below 100°C, based on the total mass of said paste, it is not clear if this is the content before or after removal.

Regarding claim 26, the phrase "preferably" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Regarding claim 32, it is not clear as to whether the hydrolysis and condensation step occurs in the presence of at least one of a thickener or thixotroping agent or if the at least one of a thickener or thixotroping agent is added after the hydrolysis and condensation step. Claim 32 will be interpreted as being dependent from claim 30 for the art rejections below. Clarification is requested.

Regarding claim 34, the claim recites "The method according to claim 30, wherein said hydrolysis and condensation in step (a) occur in the presence of finely dispersed filler." Claim 35, which depends on Claim 34, recites "The method of according to claim 34 wherein said finely dispersed filler is added after said hydrolysis and condensation of step (a)." It is not clear as to whether the hydrolysis and condensation step occurs in the presence of the finely dispersed filler or if the finely dispersed filler is added after the hydrolysis and condensation step. Claim 35 will be interpreted as being dependent from claim 30 for the art rejections below. Clarification is requested.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 21-29 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kalleder et al. WO01/23190, translation provided by U.S. 6,863,923 B1 (hereinafter "Kalleder").

Regarding claims 21, 28, and 29, Kalleder teaches a process of preparing a screen-printing paste which uses a mixture including methyltriethoxysilane, tetraethoxysilane (**at least one silane**), silica sol, hydrochloric acid, Iriodin Silk Red WR2, and silicone oil (**at least one polysiloxane of general formula $R_2Si-(O-SiR_2)_y-O-SiR_3$**) and terpeneol (**high-boiling organic solvent**). See Example 3 and Claim 1, col. 7, lines 5-38. In this example, radicals **R** are alkyl (methyl), **R'** are ethyl, **x** is 1 for methyltriethoxysilane and 0 for tetraethoxysilane. It is also noted that claims 14 and 27 of '923 includes component (c), at least one organic solvent having a boiling point of at least 150°C (**high boiling organic solvent**). Regarding the negative limitation in the last two lines of claim 21 "**...but contains no alcohol with a boiling point of**

Art Unit: 1796

substantially below 100°C,” the example is absent of such a solvent. Further, Kalleder claims a method of producing a printing substrate including the process of forming a matrix-forming condensate (enamel free paste) comprising polyorganosiloxanes obtainable by a sol-gel process and including at least one coloring filler. Regarding **y**, polyorganosiloxanes obtainable by a sol-gel process inherently have a value of **y** greater than or equal to 2. This process inherently would have a mixture of silane and siloxane, thus satisfying claim 21. Attention is also drawn to Claim 14, column 8, lines 1-22, which teaches all of the limitations of instant claim 21 with the exception of the negative limitation found in the last two lines of claim 21, “**...but contains no alcohol with a boiling point of substantially below 100°C.**”

It is noted that Kalleder's process of making the enamel free paste is not exactly the same as Applicants' process. However, Claims 21-29 are product-by-process claims. “Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process” In re Thorpe, 777 F. 2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). “The Patent Office bears a lesser burden of proof in making out a case of prima facie obviousness for product-by-process claims because of their peculiar nature” than when a product is claimed in the conventional fashion. In re Fessmann, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974). Once the examiner provides a rationale tending to show that

Art Unit: 1796

the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983) "[T]he lack of physical description in a product-by-process claim makes determination of the patentability of the claim more difficult, since in spite of the fact that the claim may recite only process limitations, it is the patentability of the product claimed and not of the recited process steps which must be established. We are therefore of the opinion that when the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claimed in a product-by-process claim, a rejection based alternatively on either section 102 or section 103 of the statute is eminently fair and acceptable. As a practical matter, the Patent Office is not equipped to manufacture products by the myriad of processes put before it and then obtain prior art products and make physical comparisons therewith." In re Brown, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972).

Regarding claim 22 as cited previously, x is 1 for methyltriethoxysilane, which reads on the paste according to claim 21, wherein x represents 1 for said first silane.

Regarding claim 23, the process as outlined by Kalleder teaches in the final step of producing the paste, the ethanol generated is evaporated in a rotary evaporator (see col. 7, lines 14-15), which would inherently remove any lower boiling solvents, if present

Art Unit: 1796

or generated during the sol-gel process. This reads on the paste of claim 23, which in which the water and alcohol with a boiling point lower than 100°C is less than substantially about five (5) percent (%).

Regarding claim 24, the pigment is an inorganic pigment with temperature stability up to 850 °C, which reads on the paste according to claim 21, wherein the said pigments are temperature resistant inorganic pigments (see Iriodin technical sheet).

Regarding claims 25 and 26, Kalleder teaches the use of Iriodin Silk Red WR2 (dispersed nanoparticles) as a component of the printing paste. Iriodin mica based pigments of the Iriodin family are natural mica core coated with titanium or iron oxide (see EMD technical sheet). Further, Kalleder teaches the printing paste can be of Iriodin mica-based pigments (see col. 5, line 5) and specifically uses Iriodin Silk Red WR2 (see Example 3, col. 7, line 16). Kalleder also teaches a process of preparing a screen-printing paste which uses hydrochloric acid to initiate the hydrolysis and condensation of silane(s) and further silicone oil (**polysiloxanes**). See Example 3, col. 7, lines 10, 16-20).

Regarding claim 27, Kalleder teaches the screen-printing paste that further includes ethylcellulose (thixotroping agent), which reads on the paste as claimed (see col. 7, lines 16-20).

Art Unit: 1796

Regarding claims 30 and 33, Kalleder teaches a process of preparing a screen-printing paste which uses a mixture including methyltriethoxysilane, tetraethoxysilane (**at least one silane**), silica sol, hydrochloric acid (**catalyst**), Iridin Silk Red WR2, and silicone oil (**at least one polysiloxane of general formula $R_2Si-(O-SiR_2)_y-O-SiR_3$**) and terpineol (**high-boiling organic solvent**). See Example 3 and Claim 1, col. 7, lines 5-38. Regarding the negative limitation of claim 30 “...**but contains no alcohol with a boiling point of substantially below 100°C**,” the example is absent of such a solvent (see claim 30, page 6, lines 11-13 of the instant application). Regarding the method steps, Kallender teaches a method of producing a printing substrate including the process of making a matrix-forming condensate (**enamel free paste**) comprising polyorganosiloxanes obtainable by a sol-gel process and including at least one coloring filler (see claim 14, col. 8, lines 1-22).

In this example, radicals **R** are alkyl (methyl), **R'** are ethyl, **x** is 1 for methyltriethoxysilane and 0 for tetraethoxysilane. Regarding **y**, polyorganosiloxanes obtainable by a sol-gel process inherently have a value of **y** greater than or equal to 2. This process inherently would have a mixture of silane and siloxane, thus satisfying claim 30. It is also noted that claims 14 and 27 of '923 includes component (c), at least one organic solvent having a boiling point of at least 150°C (**high boiling organic solvent**).

Regarding claim 36, Kalleder teaches the method of preparing a screen-printing paste based on an organically modified, inorganic binder, which includes (**d**) the

Art Unit: 1796

removal of ethanol formed during the hydrolysis and condensation using a rotary evaporator (**distillation**). See col. 7, lines 13-15.

Regarding claim 37, Kalleder teaches the process steps in Example 3 in the following order:

(a) Hydrolysis and condensation of methyltriethoxysilane, tetraethoxysilane, silica sol, with hydrochloric acid catalysts.

(c) Addition of 75 g of terpeneol (high-boiling solvent.

(d) Removal of ethanol formed during the hydrolysis and condensation

(b) Addition of Iriodin Silk Red WR2 pigment.

This reads on the method of claim 30, wherein step (c) occurs before step (d). See Example 3, col. 7, lines 10, 16-20).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

Art Unit: 1796

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 31, 32, 34, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kalleder et al. WO01/23190, translation provided by U.S. 6,863,923 B1 (hereinafter "Kalleder").

Regarding claims 31 and 32, Kalleder teaches the method according to claim 30 that includes adding ethycellulose (thixotroping agent) at step **(b), that is, after the hydrolysis and condensation in step (a)** (see col. 7, lines 16-20), which reads on the paste as claimed. Kalleder does not teach the specific order of incorporating the thixotroping agent during the hydrolysis and condensation step, as claimed in claim 31. Applicant is reminded the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results (Ex parte Rubin , 128 USPQ 440 (Bd. App. 1959), See also In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA

Art Unit: 1796

1946), *In re Gibson*, 39 F.2d 975, 5 USPQ 230 (CCPA 1930). It would have been obvious to one of ordinary skill in the art at the time of invention to produce the enamel free paste by either incorporating the thixotroping agent during the hydrolysis and condensation step or adding the thixotroping agent after the hydrolysis and condensation step.

Regarding claims 34 and 35, Kalleder teaches the method according to claim 30 that includes adding Iriodin Silk Red WR2 (**finely dispersed filler**) at step **(b)**, **that is, after the hydrolysis and condensation in step (a)**, which reads on the paste as claimed (see col. 7, lines 16-20). Kalleder does not teach the specific order of incorporating the finely dispersed filler during the hydrolysis and condensation step, as claimed in claim 34. Applicant is reminded the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results (*Ex parte Rubin*, 128 USPQ 440 (Bd. App. 1959), See also *In re Burhans*, 154 F.2d 690, 69 USPQ 330 (CCPA 1946), *In re Gibson*, 39 F.2d 975, 5 USPQ 230 (CCPA 1930). It would have been obvious to one of ordinary skill in the art at the time of invention to produce the enamel free paste by either incorporating the finely dispersed filler during the hydrolysis and condensation step or adding the finely dispersed filler after the hydrolysis and condensation step.

Art Unit: 1796

6. Claims 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kalleder et al. WO01/23190, translation provided by U.S. 6,863,923 B1 (hereinafter "Kalleder") in view of Schmidt et al. US Patent 5,731,091 (hereinafter "Schmidt").

Regarding claims 38 and 39, Kalleder teaches the production of enamel free paste as described earlier in this document. Kalleder does not teach the silkscreen process comprising: applying the enamel-free paste onto the glass to be decorated and subjecting said paste and said glass to a thermal burning in. In the same field of producing colored or dyed layers on substrates, Schmidt teaches a process for forming a vitreous layer on suitable substrates, which includes stainless steel, copper, brass, aluminum, glasses borosilicate glass, lead crystal, flint glass and ceramics (see col. 3, lines 43-47). This process involves forming a coating on the substrate and subjecting the coating and substrate to densification (thermal burning-in) at temperatures above 250°C (see '091, claim 14). It is noted the coating is similar to the composition of the instant invention in that it is produced by hydrolyzing and polycondensing a mixture comprising two silanes containing hydrolyzable groups and including temperature-stable dyes and pigments (see col. 7, line 40 - col. 8, line 16). Regarding the temperature of the burning-in process, the temperature range required to burn-in the pigment components of the composition without decomposing the pigments would be optimized, absent the showing of criticality. Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are

Art Unit: 1796

disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). It would have been obvious to one of ordinary skill at the time of invention to subject the enamel free paste and substrate of Kalleder to the densification (thermal burning-in) process of Schmidt at the optimal temperature range for the benefit of forming a decorative layer on glass.

Regarding claim 40, the combination remains as supplied above. Schmidt teaches in claim 14 the thermally densifying step (burning-in step) may be preceded by a drying step. The temperature of this drying step may be optimized to remove any associated solvents, thickeners, and thixotroping agents, prior to the burning-in step in order to form a vitreous layer (see col. 3, lines 48-50), absent the showing of criticality of the specific range. This temperature range is based on the thermal stability and boiling point of said additives relative to the temperature-stable pigments. Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). It would have been obvious to one of ordinary skill at the time of invention to subject the enamel free paste of Kalleder to the drying step of Schmidt for the benefit of forming a vitreous, decorative layer on glass.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,162,498, US 5,443,669, US 5,994,459.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alvin C. Collins III whose telephone number is (571) 270-7734. The examiner can normally be reached on Monday through Thursday, 7:30 am - 5:00 pm EST and on alternate Fridays from 7:30 am - 4:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/550,219

Page 15

Art Unit: 1796

/AC/

/Anthony McFarlane/